

ARIA

DRAFT OF "ARIA NECK STRAIGHTENING TOOL"

Thank you for purchasing ARIA NECK STRAIGHTENER.

In repairing a guitar the most common problem is the neck: warped/bowed neck, twisted neck, etc. The repair used to be only possible by skilled guitar technicians. ARIA NECK STRAIGHTENER enables you to fix these problems by yourself.

A guitar neck usually consists of 2 pieces of wood attached together with glue, and they could contract and stretch differently by climate changes such as temperature and dampness/dryness. ARIA NECK STRAIGHTENER is designed to soften the glue by heating up, and re-adjust the attachment of the two pieces. Please make sure to read this instruction manual carefully. It is very important to give proper amount of pressure by using the clamps to get the best result.

Operating Instructions

Prior to using ARIA NECK STRAIGHTENER, please read the following instructions carefully.

Precautions

Following precautions are to prevent accidents that might harm you and others around. They are categorized in three terms: 'Danger', 'Caution' and 'Attention', according to hazardous level and seriousness of the possible damage caused by inappropriate usage.



Warning: Disregarding this sign will cause a fatal or serious injury.



Caution: Disregarding this sign may cause a fatal or serious injury.



Attention: Disregarding this sign can cause a personal injury or property damage.

All precautions are indispensable. Please follow these instructions for your safety.



This symbol indicates 'Warning', 'Caution' and 'Attention'. The details of precautions are also described in each symbol (the mark in the left column is 'Attention: the device would caught fire')



This symbol indicates anything prohibited. The details of precautions are also described in each symbol (the mark in the left column is 'Disassembly Prohibited')



This symbol indicates adjuration. The details of precautions are also described in each symbol (the mark in the left column is 'Unplug').



Warning



To reduce the risk of electrical shock DO NOT use or plug in/out with wet hand.



DO NOT use 'ARIA NECK STRAIGHTENER' with improper voltage.
It will cause fire, electrical shock, or breakdown.



Caution



Prior to use ARIA NECK STRAIGHTENER, please read the instructions carefully.



DO NOT modify or disassemble. It may cause failures, fire or electrical shock.



To avoid risk of any accidents or failures, DO NOT use for any other purposes.



Unplug immediately if you notice noise, smell or anything suspicious.



DO NOT pour water or soak in water. It may cause a fire or electric shock.



Make sure to unplug the unit when it is not in use.



Avoid giving the unit strong impact or dropping it.



Hold the plug, not the cord, when you plug and unplug. You may damage the cord and it may cause fire or electrical shock.



DO NOT use if any cracks are found on the cord. Make sure to seek repair.



DO NOT touch the unit directly when it is in use to prevent burning injury.



Please make sure to cool the device completely before removing it to avoid burning injury.



Attention



Please avoid placing the device in the environment below:








1. places exposed to direct sunlight
2. dusty or damp places
3. places in high temperature
4. on slope, places with vibration or any shock.
5. any place where it can get wet



Please keep this user's manual.



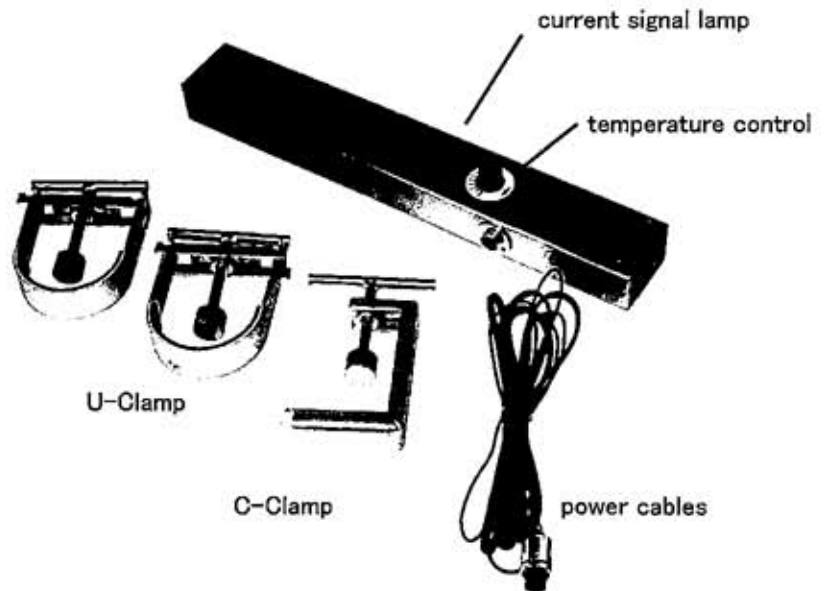
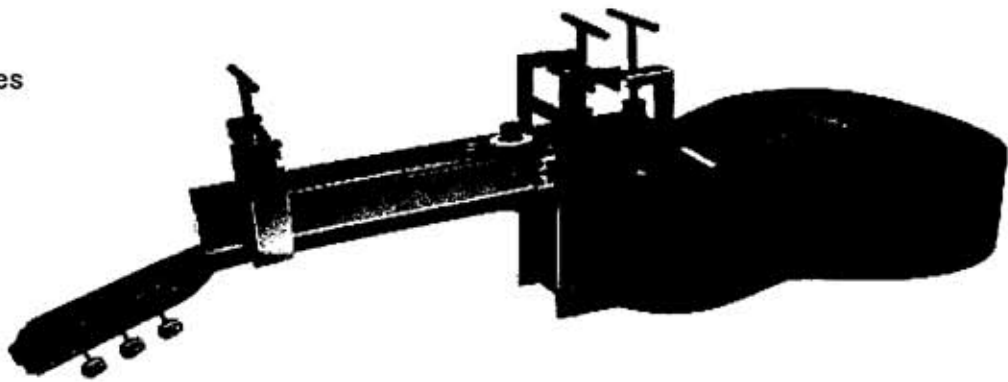
DO NOT use 'ARIA NECK STRAIGHTENER with improper voltage.

	Check the plug and cord regularly, and wipe off the dust. It may cause fire or electrocution.
	DO NOT place any combustible articles (paper, spray can,...) near the device. It may cause fire or explosion.
	Unplug the device after every use to avoid fire risk.
	DO NOT use with multiple-tap socket.
	DO NOT trip over the device. It may breakdown.
	DO NOT place anything on ARIA NECK STRAIGHTNER.
	DO NOT use ARIA NECK STRAIGHTENER for any other purposes.

If you don't use it for long time

- ◆ Make sure to unplug the device.
- ◆ Do NOT store the device in dusty or damp places.

Parts Names



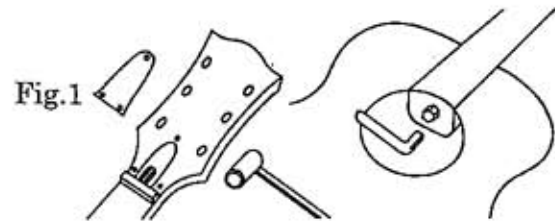
Model Code: XA0002MC(for Guitar)
 XA0003BG(for Bass)
 Voltage: AC100/117V or AC220/240V
 Capacity of Heater: 200W(for Guitar)
 290W(for Bass)

Sizes of the unit
 Guitar: 440mm×65mm×42mm
 Bass: 650mm×65mm×42mm

How to use "ARIA NECK STRAIGHTENER"

A) Before Heating

1. Inspect the neck condition.
 2. Mark where the bending is the most evident.
 3. For neck with a truss rod inside. (See Fig.1)
 Upward warp: Loosen the truss rod completely.
 Downward warp: Loosen the truss rod once completely and then tighten a little by giving a couple of winds.
 4. Loosen the strings and set them aside. (See Fig. 2)
 Keep them off the fret board with a stick enclosed.
 5. Place spacers on the fingerboard.
 6. Position the heater on top (See Fig.3) and tighten it with clamps.
 7. Plug in and turn the thermostat up to the maximum. It will take 25 to 30 minutes to pre-heat.
- * Power will be OFF by turning the thermostat down to Zero, Make sure power is off when you plug in/out.



B) After heating

1. After the heating session, touch the bottom of the neck.
 If warm, turn off the switch and cool it down.
2. After cooling down, remove the heater and clamps, and then check the result. Normally it takes about an hour to get cooled down however may need longer according to warping condition.

Fig.2

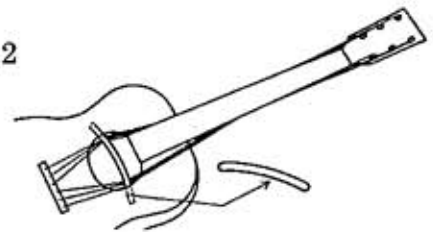
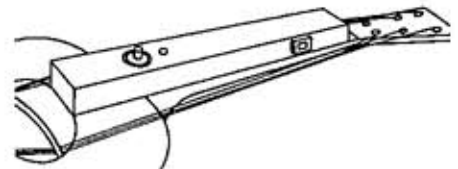


Fig.3



* Scales on thermostat and temperature control

The scales show the estimated temperatures described below. The indicated temperatures might vary depends on usage condition.

Scale	10	9	8	7	6	5	4
Temperature	120°C	110°C	100°C	85°C	75°C	65°C	55°C

* If you set the temperature low enough on a hot summer day, it may take more than 30 minutes to turn on the switch again after the thermostat automatically turns the device off. This is because the temperature between the thermostat and outside temperature is very little and there is nothing wrong on the device.

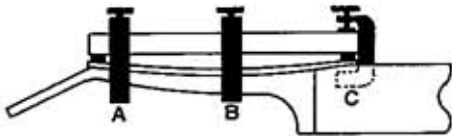
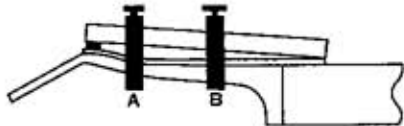
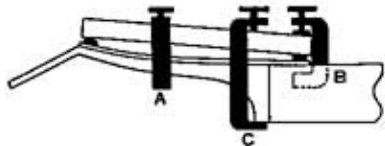
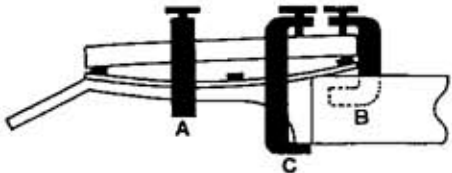
CAUTIONS

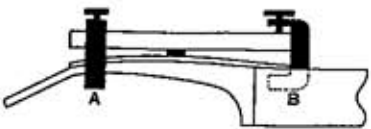

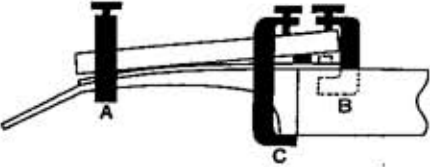
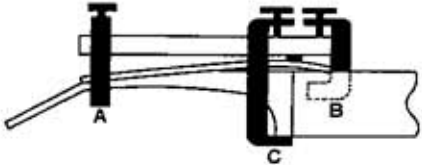
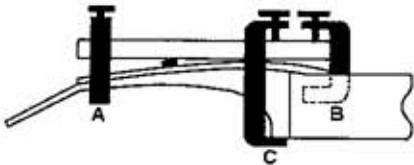
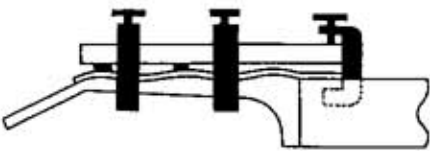

1. Heating length may vary according to the clamp load, spacer thickness, or coating materials.
2. For quick repairing, the heater can be placed directly to heat them up first, then insert spacers and clamp them. However, in this case temperature needs to be controlled with thermostat to avoid any risk of damaging neck binding, inlays, and position makers by overheating.
3. Each spacer should be cut slightly narrower than the fingerboard width so that the repairing procedures can be observed more easily. Check by looking down the edge of the neck from the headstock as well. Take care when applying the clamps.
4. Spacer is replaceable by any wooden material.

Neck Condition Table

Upward Warp		Downward Warp	
General upward warp	A-1	General downward warp	B-1
Partial upward warp - from 1 st to 5 th fret	A-2	Partial downward warp - from 1 st to 5 th fret	B-2
Turn up from the heel	A-3	Drop off from the heel	B-3
Partial upward warp with a humped part	A-4	Partial downward warp in a humped part	B-4
		Partial drop of from 12 th or 14 th fret to 19 th fret	B-5
Wavy Neck	C	Twisted Neck	D

* Extra large C-type is not included. Please purchase it separately as needed.

How to set	
<p>A-1</p> 	<p>Place each spacer on both end of the fingerboard. Clamp at A (Use U-type) & C (Use C-type) just to hold the heater on the neck. Clamp hard at B (Use U-type) to force the neck upwards into a slightly reverse curve.</p>
<p>A-2</p> 	<p>Place a spacer on the first fret. Clamp at B (Use U-type) just to hold the heater. Clamp at A (Use U-type) with more force.</p>
<p>A-3</p> 	<p>Place each spacer on both ends of the fingerboard. Clamp at A (Use U-type) to hold the heater. Clamp at B (Use C-type) with a little more force. Use the large heel clamp (Extra large C-type) to force up the length of the neck into reverse curve.</p>
<p>A-4</p> 	<p>Place a spacer on the humped part of the neck. Clamp at A (Use U-type) to fix the general upward warp and clamp at B (Use C-type) to force the hump down. Clamp at C (Use Extra large C-type) hard enough to lift up the whole length of neck into a slightly reverse curve.</p>

<p>B-1</p> 	<p>Place a spacer in the middle of the fingerboard. Clamp at B (Use C-type) to hold the heater. Clamp at A (Use U-type) with more power to force the neck up into a slightly reverse curve.</p>
<p>B-2</p> 	<p>Place each spacer on 3rd and 19th fret. Clamp at B (Use C-type) to hold the heater. Clamp at A (Use U-type) hard enough to give the neck a slight reverse curve.</p>
<p>B-3</p> 	<p>Place a spacer on the neck joint. (12th or 14th fret.) Clamp at B (Use C-type) to hold the heater. Clamp at A (Use U-type) and at C (Use Extra large C-type) harder enough to force the neck up slightly into a reverse curve.</p>
<p>B-4</p> 	<p>Place a spacer on 12th or 14th fret. Clamp at A (Use U-type) to hold the heater. Clamp at B (Use C-type) and at C (Use Extra large C-type) harder enough.</p>
<p>B-5</p> 	<p>Place a spacer on the neck just between the humped portion and downward warpage portion. Clamp at B (Use C-type) to hold the heater. Use the clamp at C (Use Extra large C-type) to force down the hump and at the same time clamp at A (Use U-type) to make the whole neck straight.</p>
<p>C</p> 	<p>Place spacers on the humped portions. Give even power to each clamp with enough force to get the neck straightened. This procedure may need to be repeated two or three times.</p>
<p>D</p> 	<p>Place a spacer on the upper side of beveled fingerboard and use the clamp (Use U-type) as illustrated. Adjust the spacer's thickness and angle by yourself depending on a state of the twist.</p>